VIA FACISIMILE: 1-571-273-8300

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Art Unit	:	2624
Examiner	:	Chong R. Kim
Applicant	:	Joseph S. Stam et al.
Appln. No.	:	10/645,801
Filing Date	:	August 20, 2003
Confirmation No.	:	9297
Docket No.	:	AUTO 222
Customer No.	:	028,167

Mail Stop Appeal Brief -- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION – 37 CFR §41.37)

1. Transmitted herewith is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on January 3, 2007.

2. **STATUS OF APPLICANT**

This application is on behalf of:

_X_ other than a small entity
___ small entity

Verified Statement

___ attached
___ previously submitted on _____

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. §41.20(b)(2) the fee for filing the Appeal Brief is:

___	small entity	$250.00
X	other than a small entity	$500.00

Appeal Brief Fee Due: $500.00

4. EXTENSION OF TERM

X Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal Brief fee:	$500.00
Extension fee (if any):	$0.00

TOTAL FEE DUE: $500.00

6. FEE PAYMENT

____ Attached is a check in the sum of _____

X Charge Account No. 07-1070 the sum of $500.00
A duplicate of this transmittal is attached.

7. FEE DEFICIENCY

X If any additional extension and/or fee is required charge Account No. 07-1070.

and/or

___ If any additional fee for claims is required, charge Account No. 07-1070.

Applicant : Joseph S. Stam et al.
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Respectfully Submitted,

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Date: March 5, 2007

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Atty. Docket No. AUTO 222

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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Appellants	:	Joseph S. Stam et al.
Examiner	:	Chong R. Kim
Art Unit	:	2624
Filing Date	:	August 20, 2003
Confirmation No.	:	9297
For	:	IMAGE ACQUISITION AND PROCESSING METHODS FOR AUTOMATIC VEHICULAR EXTERIOR LIGHTING CONTROL

Mail Stop Appeal Brief - Patents
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APPEAL BRIEF (37 CFR §41.37)

This brief is in furtherance of the Notice of Appeal filed in this case on January 3, 2007.

The fee required under §40.20(b)(2) is enclosed. If any additional fee is required, the Appellant requests that the fee be charged to Deposit Account No. 07-1070.

This brief contains these items under the following headings, and in the order set forth below (37 CFR §41.37(c)(1)):

I. Real Party in Interest

II. Related Appeals and Interferences

III. Status of Claims

IV. Status of Amendments

V. Summary of Claimed Subject Matter

1. Independent Claim 1

2. Independent Claim 4

3. Independent Claim 20
4. Independent Claim 28
5. Independent Claim 40
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12. Independent Claim 71
13. Independent Claim 74
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25. Claims 14, 24 and 32
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32. Claim 36

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VI. Grounds of Rejection to be Reviewed on Appeal

VII. Arguments

A. The References

1. U.S. Patent No. 6,393,133 issued to Breed et al.

2. U.S. Patent Application Publication No. 2004/0032981 issued to li et al.

3. U.S. Patent No. 6,049,171 issued to Stam et al.

B. Legal Considerations

1. The objection to claim 41 under 37 C.F.R. §1.75(d)(1) as reciting features that are not supported by the "description" of the specification.

a. Claim 41

2. The rejection of claims 1-3, 40, 42, 44-53, 65-69, 71 and 74 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,393,133, to Breed et al.

a. Claim 1

b. Claim 40

c. Claim 44

e. Claim 47

f. Claim 50

g. Claim 65

h. Claim 69

i. Claim 71

j. Claim 74

k. Claims 2, 46, 49 and 52

l. Claims 3 and 51

m. Claim 42

n. Claims 45, 48 and 53

o. Claim 66

p. Claim 67

q. Claim 68

3. The rejections of claims 20, 24, 25, 27, 28 and 35-39 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and U.S. Patent Application Publication No. 2004/0032981, to li et al.

a. Claim 20

b. Claim 28

c. Claim 24

d. Claim 25

e. Claims 27 and 39

f. Claim 35

g. Claim 36

h. Claim 37

i. Claim 38

4. The rejection of claim 26 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al., li et al. and U.S. Patent 6,049,171, to Stam et al.

a. Claim 26

5. The rejection of claims 43, 70, 72 and 73 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and Stam et al.

a. Claim 43

b. Claim 70

c. Claim 72

d. Claim 73

I. Real Party in Interest

The real party in interest in this application is Gentex Corporation, the assignment to which was recorded at Reel 014792, Frame 0165 on December 15, 2003.

II. Related Appeals and Interferences

Appellant is aware of no appeals or interferences that would directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. Status of Claims

This is an appeal from a final rejection of claims 1-20, 24-28, 35-40, 42-53 and 64-74 of the above-identified application. Claims 21-23, 29-34 and 41 have been deemed by the Examiner to be allowable if re-written in independent form to include all limitations of the associated base claim and all intervening claims. Claims 1-53 and 64-74 as currently pending are attached hereto in the Claims Appendix.

IV. Status of Amendments

Amendments to the claims were proposed in a paper dated November 28, 2006 in response to an Official Office Action dated September 29, 2006. The Examiner indicated that these amendments would be entered for the purposes of appeal. These amendments are reflected in the Claims Appendix form included herewith.

V. Summary of Claimed Subject Matter

1. Independent Claim 1

Independent claim 1 defines an automatic vehicular exterior light control,

comprising: (a) a controller configured to generate (a1) at least one exterior light control signal as a function of a classification network, said controller is further configured to execute (b) a first algorithm comprising (c) at least one second algorithm selected from the group comprising: an on state to off state transition state algorithm and an off state to on state transition state algorithm, wherein (d) the classification network is trained using light sources classified using expert knowledge.

The discussion contained in paragraphs [0116] and [0123], Tables 1 and 2 and Figs. 14 and 15 provides concise support for this subject matter.

2. Independent Claim 4

Independent claim 4 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of a neural network analysis, wherein at least one output of said neural network comprises at least three states.

The discussion contained in paragraphs [0092], [0093], [0116] and [0128] provides support for this subject matter. Specifically it is stated in paragraph [0116] that, "While under automatic control, vehicle headlamps can be in one of three states: an OFF STATE 1401, a TRANSITION STATE 1402 or the ON STATE 1403."

3. Independent Claim 20

Independent claim 20 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables and a substantially continuous output value having at least three states indicative of a probability.

The discussion contained in paragraphs [0090], [0092], [0116] and [0128] provides support for this subject matter. Specifically it is stated in paragraph [0116] that, "While under automatic control, vehicle headlamps can be in one of three states: an OFF STATE 1401, a TRANSITION STATE 1402 or the ON STATE 1403."

4. Independent Claim 28

Independent claim 28 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables, a plurality of weighting factors and an output, wherein said output comprises at least three states.

The discussion contained in paragraphs [0090], [0092], [0116] and [0128] provides support for this subject matter. Specifically it is stated in paragraph [0116] that, "While under automatic control, vehicle headlamps can be in one of three states: an OFF STATE 1401, a TRANSITION STATE 1402 or the ON STATE 1403."

5. Independent Claim 40

Independent claim 40 defines an automatic vehicular exterior light control, comprising: a controller configured to generate an exterior light control signal, said controller is further configured to execute a first algorithm comprising at least one second algorithm selected from the group comprising: an on state to off state transition state algorithm and an off state to on state transition state algorithm.

The discussion contained in paragraphs [0098], [0116] and [0123], Tables 1 and 2 and Figs. 14 and 15 provides concise support for this subject matter.

6. Independent Claim 44

Independent claim 44 defines an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle, wherein said output comprises at least three states.

The discussion contained in paragraphs [0098], [0116] and [0123] provides support for this subject matter. Specifically it is stated in paragraph [0116] that, "While under automatic control, vehicle headlamps can be in one of three states: an OFF

STATE 1401, a TRANSITION STATE 1402 or the ON STATE 1403."

7. Independent Claim 47

Independent claim 47 defines an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein said classification network determines the type of light source detected based upon at least one characteristic of at least one previously classified light source verified to be accurately classified by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

8. Independent Claim 50

Independent claim 50 defines an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a trainable classification network, wherein said classification network is trained using at least one light source classified using expert knowledge by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

9. Independent Claim 64

Independent claim 64 defines an automatic vehicular exterior light control, comprising: a controller configured to detect a clear condition when no other lights of other vehicles are detected within a range, wherein automatic activation of head lamps is inhibited by one or more events of the group comprising: threshold number of streetlights exceeded, threshold number of streetlights per area exceeded, steering wheel angle magnitude threshold exceeded.

The discussion contained in paragraphs [0089] and [0128] provides support for this subject matter.

10. Independent Claim 65

Independent claim 65 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of a classification network comprising at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

11. Independent Claim 69

Independent claim 69 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources and a substantially continuous output value indicative of a probability.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

12. Independent Claim 71

Independent claim 71 defines an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one variable, at least one weighting factor established by examining statistical data wherein said statistical data is derived from a plurality of images containing known light sources and at least one output.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

13. Independent Claim 74

Independent claim 74 defines an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle wherein said classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

The discussion contained in paragraphs [0010], [0091], [0098], [0116] and [0123] provides support for this subject matter. provides support for this subject matter.

14. Claims 2, 46, 49 and 52

Claims 2, 46, 49 and 52 depend from independent claims 1, 44, 47 and 50, respectively, and further recite wherein said classification network is selected from the group comprising: a neural network and a probability function.

The discussion contained in paragraphs [0008] provides the first support for this subject matter.

15. Claims 3 and 51

Claims 3 and 51 depend from independent claims 1 and 50, respectively, and further recite wherein said expert knowledge is selected from the group comprising: empirical data, experimental data, statistical data and manually classified data.

The discussion contained in paragraphs [0010] provides the first support for this subject matter.

16. Claims 5 and 66

Claims 5 and 66 depend from independent claims 4 and 65, respectively, and further recite wherein said neural network analysis comprises: a plurality of inputs and a plurality of weights, at least one of which is associated with each input.

The discussion contained in paragraphs [0135] provides the first support for this subject matter.

17. Claims 6 and 67

Claims 6 and 67 depend from independent claims 4 and 65, respectively, and further recite wherein at least one output is based upon at least one of the group comprising: the sum of the inputs, the products of the inputs, the sum of the inputs with associated weighting factors and the products of the inputs with associated weighting factors.

The discussion contained in paragraphs [0107] and [0128] provides support for this subject matter.

18. Claims 7 and 68

Claims 7 and 68 depend from independent claims 4 and 65, respectively, and further recite wherein said neural network analysis further comprises: at least one hidden layer node; and at least one weighting factor, wherein each hidden layer node is associated with at least one weighting factor.

The discussion contained in paragraphs [0097] provides the first support for this subject matter.

19. Claim 8

Claim 8 depends from claim 4 and further recites wherein the value of each hidden layer node is based upon the product of at least one or more input and at least one weighting factor associated with each input.

The discussion contained in paragraphs [0107] and [0128] provides support for this subject matter.

20. Claim 9

Claim 9 depends from claim 4 and further recites wherein said exterior light control signal is based upon the product of at least one hidden layer node and at least one hidden layer weighting factor.

The discussion contained in paragraphs [0097] provides the first support for this subject matter.

21. Claims 10, 21, 29, 70 and 72

Claims 10, 21, 29, 70 and 72 depend from independent claims 4, 20, 28, 69 and 71, respectively, and further recite further comprising at least one input variable wherein said at least one input variable is selected from a group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

The discussion contained in paragraphs [0087] provides the first support for this subject matter.

22. Claims 11, 22, 30 and 73

Claims 11, 22, 30 and 73 depend from independent claims 4, 20, 28 and 71, respectively, and further recite further comprising at least one input variable wherein said at least one input variable is selected from a group of controlled vehicle associated operating parameters comprising: vehicle speed, ambient light level, vehicle turn rate, lane tracking, vehicle pitch, vehicle yaw, geographic location and road type.

The discussion contained in paragraphs [0087] provides the first support for this subject matter.

23. Claims 12, 23 and 31

Claims 12, 23 and 31 depend from independent claims 4, 20 and 28, respectively, and further recite wherein said vehicle turn rate is determined via at least one of the items selected from the group comprising: steering wheel angle, a compass, wheel speed, GPS and image analysis results.

The discussion contained in paragraphs [0087] provides the first support for this subject matter.

24. Claims 13 and 35

Claims 13 and 35 depend from independent claims 4 and 28, respectively, and further recite wherein said neural network further comprising at least one output selected from the group comprising: a Boolean true-false value and a substantially continuous value indicative of a probability.

The discussion contained in paragraphs [0092] provides the first support for this subject matter.

25. Claims 14, 24 and 32

Claims 14, 24 and 32 depend from independent claims 4, 20 and 28, respectively, and further recite wherein said controller is further configured to determine whether at least one light source is either a headlight of an oncoming vehicle, a taillight of a leading vehicle or a non-vehicular light source as a function of said neural network analysis.

The discussion contained in paragraphs corresponding to Fig. 5 provides the most concise support for this subject matter.

26. Claims 15, 25 and 33

Claims 15, 25 and 33 depend from independent claims 4, 20 and 28, respectively, and further recite wherein said determination is further a function of the brightness of the light source.

The discussion contained in paragraphs [0073] provides the first support for this subject matter.

27. Claims 16, 26 and 34

Claims 16, 26 and 34 depend from independent claims 4, 20 and 28, respectively, and further recite wherein said determination is further a function of any AC flicker that may be present in the light source.

The discussion contained in paragraphs [0089] provides the first support for this subject matter.

28. Claim 17

Claim 17 depends from claim 4 and further recites wherein said neural network is trained utilizing empirical data.

The discussion contained in paragraphs [0010] provides the first support for this subject matter.

29. Claims 18 and 38

Claims 18 and 38 depend from independent claims 4 and 28, respectively, and further recite wherein said empirical data is obtained by analyzing at least one image comprising known light sources.

The discussion contained in paragraphs [0091] provides the first support for this subject matter.

30. Claim 19

Claim 19 depends from claim 4 and further recites comprising twenty three input variables.

Discussion contained throughout the specification as well as the originally present claims provides support for this subject matter.

31. Claims 27 and 39

Claims 27 and 39 depend from independent claims 20 and 28, respectively, and further recite wherein said probability function is selected from the group comprising: a first order equation, a second order equation, a third order equation and a fourth order equation.

Discussion contained throughout the specification as well as the originally present claims provides support for this subject matter.

32. Claim 36

Claim 36 depends from claim 28 and further recites wherein said weighting factors are determined experimentally by examining at least one image containing at least one known light source.

The discussion contained in paragraph [0010] provides support for this subject matter.

33. Claim 37

Claim 37 depends from claim 28 and further recites wherein said weighting factors are determined by examining statistical data.

The discussion contained in paragraph [0010] provides support for this subject matter.

34. Claim 41

Claim 41 depends from claim 40 and further recites wherein said off state to on state transition state is entered when at least one of the conditions is satisfied selected from the group comprising: scene free of headlamps and tail lamps with brightness above a threshold, less than threshold number of AC lights in image, less than threshold number of lights in the image, threshold number of continuous clear cycles reached, controlled vehicle speed above threshold, controlled vehicle steering wheel angle magnitude below threshold value, HOLD timer elapsed, INACTIVITY timer elapsed, TAILLAMP OVERTAKE timer, FOG condition clear, RAIN condition clear, street lamp density below threshold and traffic density delay.

Discussion contained throughout the specification as well as the originally present claims provides support for this subject matter.

35. Claim 42

Claim 42 depends from claim 40 and further recites wherein said on state to off state transition state is entered when at least one light source is detected.

The discussion contained in paragraphs [0098], [0116] and [0123], Tables 1 and 2 and Figs. 14 and 15 provides concise support for this subject matter.

36. Claim 43

Claim 43 depends from claim 40 and further recites wherein at least one of said transition states comprises a series of levels and movement between levels is a function of at least one of the variables selected from the group comprising: light source brightness, light source position, confidence of classification, light source type, controlled vehicle speed, and controlled vehicle turn rate.

The discussion contained in paragraphs [0098], [0116] and [0123], Tables 1 and 2 and Figs. 14 and 15 provides concise support for this subject matter.

37. Claim 45

Claim 45 depends from claim 45 and further recites further comprising the step of: determining the control state of at least one exterior light of the controlled vehicle based upon said output of said classification network.

Discussion contained throughout the specification as well as the originally present claims provides support for this subject matter.

VI. Grounds of Rejection to be Reviewed on Appeal

1. The objection to claim 41 under 37 C.F.R. §1.75(d)(1) as reciting features that are not supported by the "description" of the specification.

2. The rejection of claims 1-3, 40, 42, 44-53, 65-69, 71 and 74 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,393,133, to Breed et al.

3. The rejections of claims 20, 24, 25, 27, 28 and 35-39 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and U.S. Patent Application Publication No. 2004/0032981, to li et al.

4. The rejection of claim 26 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al., li et al. and U.S. Patent 6,049,171, to Stam et al.

5. The rejection of claims 43, 70, 72 and 73 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and Stam et al.

VII. Arguments

A. The References

1. U.S. Patent No. 6,393,133 issued to Breed et al.

Breed et al. discloses a Method and system for controlling a vehicular system based on occupancy of the vehicle. The article entitled "Learned Classification of Sonar Targets Using a Massively Parallel Network" by Gorman et al. ("Gorman") pointed out by the Examiner as being incorporated in Breed et al., is completely irrelevant in respect to the present invention. The Gorman article discusses at length classification of sonar targets for the purpose of identifying sub-surface geological characteristics. The Gorman article, in stark contrast, does not even purport to teach the fundamentals of neural networks or probability functions, let alone, how one of ordinary skill in the art would implement either for the purpose of automatic vehicle exterior light control.

There are only two paragraphs in the last column of the detail description of Breed et al. that even mention automatic vehicular exterior lighting control as disclosed and claimed in the present application.

2. U.S. Patent Application Publication No. 2004/0032981 issued to li et al.

Li et al. discloses a Method and computer program product for identifying and correcting systematic noise in a pattern recognition system. A selection portion then selects a subset of pattern samples from the rejected input patterns based upon

the similarity of each pattern to one of the represented output classes. These selected pattern samples are inputted into a review portion that subjects them to an independent review to determine if they were correctly rejected. Finally, a training portion retrains the classifier based upon the independent review of the selected pattern samples.

There is absolutely no teaching within Li et al. of an automatic vehicular exterior lighting control as disclosed and claimed in the present application.

3. U.S. Patent No. 6,049,171 issued to Stam et al.

Stam et al., which is commonly assigned with the present application, discloses a continuously variable headlamp control. Stam et al. does not disclose subject matter that is anticipatory of the subject matter claimed in the present application nor does the subject matter of Stam et al. render the subject matter claimed in the present application obvious, even when combined with the remaining art of record.

B. Legal Considerations

1. The objection to claim 41 under 37 C.F.R. §1.75(d)(1) as reciting features that are not supported by the "description" of the specification.

a. Claim 41

The Appellant wishes to point the Examiner specifically to Figs. 14-17 and to paragraphs [0119] through [0127] where the features of claim 41 are explicitly depicted and described, respectively, in excruciating detail. Additionally, the Appellant once again respectfully points out that claim 41 is an originally presented claim, therefore, as discussed in MPEP §608.01(l) the Appellant may rely upon the content as forming a part of the original specification. Understanding this portion of the specification is paramount for appreciating the present invention as recited in many of the pending claims.

2. The rejection of claims 1-3, 40, 42, 44-53, 65-69, 71 and 74 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,393,133, to Breed et al.

a. Claim 1

As an initial matter of fact, the article entitled "Learned Classification of Sonar Targets Using a Massively Parallel Network" by Gorman et al. ("Gorman") pointed out by the Examiner as being incorporated in U.S. Patent 6,393,133, to Breed et al., is completely irrelevant in respect to the present invention. The Gorman article discusses at length classification of sonar targets for the purpose of identifying sub-surface geological characteristics. The Gorman article, in stark contrast, does not even purport to teach the fundamentals of neural networks or probability functions, let alone, how one of ordinary skill in the art would implement either for the purpose of automatic vehicle exterior light control. There are only two paragraphs in the last column of the detail description of Breed et al. that even mention automatic vehicular exterior lighting control as disclosed and claimed in the present application; these paragraphs do not even suggest how one would implement a neural network or trained pattern recognition in a automatic vehicular exterior lighting control.

For at least the reasons expressed above, the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of a classification network, said controller is further configured to execute a first algorithm comprising at least one second algorithm selected from the group comprising: an on state to off state transition state algorithm and an off state to on state transition state algorithm, wherein the classification network is trained using light sources classified using expert knowledge as recited in claim 1. Therefore, the Appellant respectfully submits that claim 69 is patentable over Breed et al.

b. Claim 40

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et does not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate an exterior light control signal, said controller is further configured to execute a first

algorithm comprising at least one second algorithm selected from the group comprising: an on state to off state transition state_algorithm and an off state to on state transition state algorithm as recited in claim 40. Therefore, the Appellant respectfully submits that claim 40 is patentable over Breed et al.

c. Claim 44

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle, wherein said output comprises at least three states as recited in claim 44. Therefore, the Appellant respectfully submits that claim 44 is patentable over Breed et al.

e. Claim 47

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein said classification network determines the type of light source detected based upon at least one characteristic of at least one previously classified light source verified to be accurately classified by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources as recited in claim 47. Therefore, the Appellant respectfully submits that claim 47 is patentable over Breed et al.

f. Claim 50

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a trainable classification network, wherein said classification network is trained using at least one light source classified using expert knowledge by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources as recited in claim 50. Therefore, the Appellant respectfully submits that claim 50 is patentable over Breed et al.

g. Claim 65

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of a classification network comprising at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources as recited in claim 65. Therefore, the Appellant respectfully submits that claim 65 is patentable over Breed et al.

h. Claim 69

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources and a substantially continuous output value indicative of a probability as recited in claim 69.

Therefore, the Appellant respectfully submits that claim 69 is patentable over Breed et al.

i. Claim 71

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one variable, at least one weighting factor established by examining statistical data wherein said statistical data is derived from a plurality of images containing known light sources and at least one output as recited in claim 71. Therefore, the Appellant respectfully submits that claim 71 is patentable over Breed et al.

j. Claim 74

For at least the reasons expressed above with regard to claim 1 the Appellant respectfully submits that Breed et al. does not teach, suggest or provide motivation for an automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of: classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle wherein said classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources as recited in claim 74. Therefore, the Appellant respectfully submits that claim 74 is patentable over Breed et al.

k. . Claims 2, 46, 49 and 52

For at least the reasons expressed above with regard to claim 1 and in that claims 2, 46, 49 and 52 depend from claims 1, 44, 47 and 50, respectively, the

Appellant respectfully submits that claims 2, 46, 49 and 52 are patentable over Breed et al.

l. Claims 3 and 51

For at least the reasons expressed above with regard to claim 1 and in that claims 3 and 51 depend from claims 1 and 50, respectively, the Appellant respectfully submits that claims 3 and 51 are patentable over Breed et al.

m. Claim 42

For at least the reasons expressed above with regard to claim 1 and in that claim 42 depends from claim 40, the Appellant respectfully submits that claim 42 is patentable over Breed et al.

n. Claims 45, 48 and 53

For at least the reasons expressed above with regard to claim 1 and in that claims 45, 48 and 53 depend from claims 44, 47 and 50, respectively, the Appellant respectfully submits that claims 45, 48 and 53 are patentable over Breed et al.

o. Claim 66

For at least the reasons expressed above with regard to claim 1 and in that claim 66 depends from claim 64, the Appellant respectfully submits that claim 66 is patentable over Breed et al.

p. Claim 67

For at least the reasons expressed above with regard to claim 1 and in that claim 67 depends from claim 64, the Appellant respectfully submits that claim 67 is patentable over Breed et al.

q. Claim 68

For at least the reasons expressed above with regard to claim 1 and in that claim 68 depends from claim 64, the Appellant respectfully submits that claim 68 is patentable over Breed et al.

3. The rejections of claims 20, 24, 25, 27, 28 and 35-39 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and U.S. Patent Application Publication No. 2004/0032981, to li et al.

a. Claim 20

As an initial matter of fact, the article entitled "Learned Classification of Sonar Targets Using a Massively Parallel Network" by Gorman et al. ("Gorman") pointed out by the Examiner as being incorporated in U.S. Patent 6,393,133, to Breed et al., is completely irrelevant in respect to the present invention. The Gorman article discusses at length classification of sonar targets for the purpose of identifying sub-surface geological characteristics. The Gorman article, in stark contrast, does not even purport to teach the fundamentals of neural networks or probability functions, let alone, how one of ordinary skill in the art would implement either for the purpose of automatic vehicle exterior light control. There are only two paragraphs in the last column of the detail description of Breed et al. that even mention automatic vehicular exterior lighting control as disclosed and claimed in the present application; these paragraphs do not even suggest how one would implement a neural network or trained pattern recognition in a automatic vehicular exterior lighting control.

For at least the reasons expressed above, the Appellant respectfully submits that Breed et al., li et al. or the combination do not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables and a substantially continuous output value having at least three states indicative of a probability as recited in claim 20. Therefore, the Appellant respectfully submits that claim 20 is patentable over Breed et al. and li et al.

b. Claim 28

For at least the reasons expressed above with respect to claim 20, the Appellant respectfully submits that Breed et al., li et al. or the combination do not teach, suggest or provide motivation for an automatic vehicular exterior light control, comprising: a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables, a plurality of weighting factors and an output, wherein said output comprises at least three states as recited in claim 28. Therefore, the Appellant respectfully submits that claim 28 is patentable over Breed et al. and li et al.

c. Claim 24

For at least the reasons expressed above with regard to claim 20 and in that claim 24 depends from claim 20, the Appellant respectfully submits that claim 24 is patentable over Breed et al. and li et al.

d. Claim 25

For at least the reasons expressed above with regard to claim 20 and in that claim 25 depends from claim 20, the Appellant respectfully submits that claim 25 is patentable over Breed et al. and li et al.

e. Claims 27 and 39

For at least the reasons expressed above with regard to claim 20 and in that claims 27 and 39 depend from claims 20 and 28, respectively, the Appellant respectfully submits that claims 27 and 39 are patentable over Breed et al. and li et al.

f. Claim 35

For at least the reasons expressed above with regard to claim 20 and in that claim 35 depends from claim 28, the Appellant respectfully submits that claim 35 is patentable over Breed et al. and li et al.

g. Claim 36

For at least the reasons expressed above with regard to claim 20 and in that claim 36 depends from claim 28, the Appellant respectfully submits that claim 36 is patentable over Breed et al. and li et al.

h. Claim 37

For at least the reasons expressed above with regard to claim 20 and in that claim 37 depends from claim 28, the Appellant respectfully submits that claim 37 is patentable over Breed et al. and li et al.

i. Claim 38

For at least the reasons expressed above with regard to claim 20 and in that claim 38 depends from claim 28, the Appellant respectfully submits that claim 38 is patentable over Breed et al. and li et al.

4. The rejection of claim 26 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al., li et al. and U.S. Patent 6,049,171, to Stam et al.

a. Claim 26

For at least the reasons expressed above with regard to independent claim 20 and in that claim 26 depends from claim 20, the Appellant respectfully submits that claim 26 is patentable over Breed et al., li et al. and Stam et al.

5. The rejection of claims 43, 70, 72 and 73 under 35 U.S.C. §103(a) as being unpatentable over the combination of Breed et al. and Stam et al.

a. Claim 43

For at least the reasons expressed above with regard to independent claim 40 and in that claim 43 depends from claim 40, the Appellant respectfully submits that claim 43 is patentable over Breed et al. and Stam et al.

b. Claim 70

For at least the reasons expressed above with regard to independent claim 69 and in that claim 70 depends from claim 69, the Appellant respectfully submits that claim 70 is patentable over Breed et al. and Stam et al.

c. Claim 72

For at least the reasons expressed above with regard to independent claim 71 and in that claim 72 depends from claim 71, the Appellant respectfully submits that claim 72 is patentable over Breed et al. and Stam et al.

d. Claim 73

For at least the reasons expressed above with regard to independent claim 71 and in that claim 73 depends from claim 71, the Appellant respectfully submits that claim 73 is patentable over Breed et al. and Stam et al.

C. Conclusion

For at least the reasons set forth above, and as is apparent from examining the invention defined by claims 1-53 and 64-73 when properly considering the cited references, these claims define patentable subject matter. Accordingly, reversal of the rejections of these claims under 35 U.S.C. §§ 102 and 103 is appropriate and is respectfully solicited.

Respectfully submitted,
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VIII. Claims Appendix (37 CFR §41.37(c)(1)(viii))

1. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of a classification network, said controller is further configured to execute a first algorithm comprising at least one second algorithm selected from the group comprising: an on state to off state transition state algorithm and an off state to on state transition state algorithm, wherein the classification network is trained using light sources classified using expert knowledge.

2. An automatic vehicular exterior light control as in claim 1 wherein said classification network is selected from the group comprising: a neural network and a probability function.

3. An automatic vehicular exterior light control as in claim 1 wherein said expert knowledge is selected from the group comprising: empirical data, experimental data, statistical data and manually classified data.

4. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of a neural network analysis, wherein at least one output of said neural network comprises at least three states.

5. An automatic vehicular exterior light control as in claim 4 wherein said neural network analysis comprises:

a plurality of inputs and a plurality of weights, at least one of which is associated with each input.

6. An automatic vehicular exterior light control as in claim 5 wherein at least one output is based upon at least one of the group comprising: the sum of the inputs, the

products of the inputs, the sum of the inputs with associated weighting factors and the products of the inputs with associated weighting factors.

7. An automatic vehicular exterior light control as in claim 4 wherein said neural network analysis further comprises:

at least one hidden layer node; and

at least one weighting factor, wherein each hidden layer node is associated with at least one weighting factor.

8. An automatic vehicular exterior light control as in claim 7 wherein the value of each hidden layer node is based upon the product of at least one or more input and at least one weighting factor associated with each input.

9. An automatic vehicular exterior light control as in claim 8 wherein said exterior light control signal is based upon the product of at least one hidden layer node and at least one hidden layer weighting factor.

10. An automatic vehicular exterior light control as in claim 4 further comprising at least one input variable wherein said at least one input variable is selected from a group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

11. An automatic vehicular exterior light control as in claim 4 further comprising at least one input variable wherein said at least one input variable is selected from a group of controlled vehicle associated operating parameters comprising: vehicle speed, ambient light level, vehicle turn rate, lane tracking, vehicle pitch, vehicle yaw, geographic location and road type.

12. An automatic vehicular exterior light control as in claim 11 wherein said vehicle turn rate is determined via at least one of the items selected from the group comprising: steering wheel angle, a compass, wheel speed, GPS and image analysis results.

13. An automatic vehicular exterior light control as in claim 4 wherein said neural network further comprising at least one output selected from the group comprising: a Boolean true-false value and a substantially continuous value indicative of a probability.

14. An automatic vehicular exterior light control as in claim 4 wherein said controller is further configured to determine whether at least one light source is either a headlight of an oncoming vehicle, a taillight of a leading vehicle or a non-vehicular light source as a function of said neural network analysis.

15. An automatic vehicular exterior light control as in claim 14 wherein said determination is further a function of the brightness of the light source.

16. An automatic vehicular exterior light control as in claim 14 wherein said determination is further a function of any AC flicker that may be present in the light source.

17. An automatic vehicular exterior light control as in claim 4 wherein said neural network is trained utilizing empirical data.

18. An automatic vehicular exterior light control as in claim 17 wherein said empirical data is obtained by analyzing at least one image comprising known light sources.

19. An automatic vehicular exterior light control as in claim 4 comprising twenty three input variables.

20. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables and a substantially continuous output value having at least three states indicative of a probability.

21. An automatic vehicular exterior light control as in claim 20 wherein said variables are selected from the group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

22. An automatic vehicular exterior light control as in claim 20 wherein said variables are selected from the group of controlled vehicle associated operating parameters comprising: vehicle speed, ambient light level, vehicle turn rate, lane tracking, vehicle pitch, vehicle yaw, geographic location and road type.

23. An automatic vehicular exterior light control as in claim 22 wherein said vehicle turn rate is determined via at least one of the items selected from the group comprising: steering wheel angle, a compass, wheel speed, GPS and image analysis results.

24. An automatic vehicular exterior light control as in claim 20 wherein said controller is further configured to determine whether at least one light source is either a headlight of an oncoming vehicle, a taillight of a leading vehicle or a non-vehicular light source as a function of said probability function.

25. An automatic vehicular exterior light control as in claim 24 wherein said determination is further a function of the brightness of the light source.

26. An automatic vehicular exterior light control as in claim 24 wherein said determination is further a function of any AC flicker that may be present in the light source.

27. An automatic vehicular exterior light control as in claim 20 wherein said probability function is selected from the group comprising: a first order equation, a second order equation, a third order equation and a fourth order equation.

28. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of at least one probability function, wherein said at least one probability function comprises a plurality of variables, a plurality of weighting factors and an output, wherein said output comprises at least three states.

29. An automatic vehicular exterior light control as in claim 28 wherein said variables are selected from the group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

30. An automatic vehicular exterior light control as in claim 28 wherein said variables are selected from the group of controlled vehicle associated operating parameters comprising: vehicle speed, ambient light level, vehicle turn rate, lane tracking, vehicle pitch, vehicle yaw, geographic location and road type.

31. An automatic vehicular exterior light control as in claim 30 wherein said vehicle turn rate is determined via at least one of the items selected from the group comprising: steering wheel angle, a compass, wheel speed, GPS and image analysis results.

32. An automatic vehicular exterior light control as in claim 31 wherein said controller is further configured to determine whether at least one light source is either a headlight of an oncoming vehicle, a taillight of a leading vehicle or a non-vehicular light source as a function of said probability function.

33. An automatic vehicular exterior light control as in claim 32 wherein said determination is further a function of the brightness of the light source.

34. An automatic vehicular exterior light control as in claim 32 wherein said determination is further a function of any AC flicker that may be present in the light source.

35. An automatic vehicular exterior light control as in claim 28 wherein said at least one output is selected from the group comprising: a Boolean true-false value and a substantially continuous value indicative of a probability:

36. An automatic vehicular exterior light control as in claim 28 wherein said weighting factors are determined experimentally by examining at least one image containing at least one known light source.

37. An automatic vehicular exterior light control as in claim 28 wherein said weighting factors are determined by examining statistical data.

38. An automatic vehicular exterior light control as in claim 37 wherein said statistical data is derived from a plurality of images containing known light sources.

39. An automatic vehicular exterior light control as in claim 28 wherein said probability function is selected from the group comprising: a first order equation, a second order equation, a third order equation and a fourth order equation.

40. An automatic vehicular exterior light control, comprising:

a controller configured to generate an exterior light control signal, said controller is further configured to execute a first algorithm comprising at least one second algorithm selected from the group comprising: an on state to off state transition state algorithm and an off state to on state transition state algorithm.

41. An automatic vehicular exterior light control as in claim 40 wherein said off state to on state transition state is entered when at least one of the conditions is satisfied selected from the group comprising: scene free of headlamps and tail lamps with brightness above a threshold, less than threshold number of AC lights in image, less than threshold number of lights in the image, threshold number of continuous clear cycles reached, controlled vehicle speed above threshold, controlled vehicle steering wheel angle magnitude below threshold value, HOLD timer elapsed, INACTIVITY timer elapsed, TAILLAMP OVERTAKE timer, FOG condition clear, RAIN condition clear, street lamp density below threshold and traffic density delay.

42. An automatic vehicular exterior light control as in claim 40 wherein said on state to off state transition state is entered when at least one light source is detected.

43. An automatic vehicular exterior light control as in claim 40 wherein at least one of said transition states comprises a series of levels and movement between levels is a function of at least one of the variables selected from the group comprising: light source brightness, light source position, confidence of classification, light source type, controlled vehicle speed, and controlled vehicle turn rate.

44. An automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of:

classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle,

wherein said output comprises at least three states.

45. The method of claim 44 further comprising the step of:

determining the control state of at least one exterior light of the controlled vehicle based upon said output of said classification network.

46. The method of claim 44 wherein said classification network is selected from the group comprising: a neural network and a probability function.

47. An automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of:

classifying at least one detected light source with a classification network, wherein said classification network determines the type of light source detected based upon at least one characteristic of at least one previously classified light source verified to be accurately classified by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

48. The method of claim 47 further comprising the step of:

determining the control state of at least one exterior light of the controlled vehicle based upon an output of the classification network.

49. The method of claim 47 wherein said classification network is selected from the group comprising: a neural network and a probability function.

50. An automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of:

classifying at least one detected light source with a trainable classification network, wherein said classification network is trained using at least one light source classified using expert knowledge by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

51. The method of claim 50 wherein said expert knowledge is selected from the group comprising: empirical data, experimental data, statistical data and manually classified data.

52. The method of claim 50 wherein said classification network is selected from the group comprising: a neural network and a probability function.

53. The method of claim 50 further comprising the step of:

determining the control state of at least one exterior light of the control vehicle based upon an output of said classification network.

54. cancelled

55. cancelled

56. cancelled

57. cancelled

58. cancelled

59. cancelled

60. cancelled

61. cancelled

62. cancelled

63. cancelled

64. An automatic vehicular exterior light control, comprising:

a controller configured to detect a clear condition when no other lights of other vehicles are detected within a range, wherein automatic activation of head lamps is inhibited by one or more events of the group comprising: threshold number of streetlights exceeded, threshold number of streetlights per area exceeded, steering wheel angle magnitude threshold exceeded.

65. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of a classification network comprising at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

66. An automatic vehicular exterior light control as in claim 65 wherein said classification network analysis comprises:

a plurality of inputs and a plurality of weighting factors at least one of which is associated with each input.

67. An automatic vehicular exterior light control as in claim 66 further comprising at least one output, wherein said at least one output is based upon at least one of the group comprising: the sum of the inputs, the products of the inputs, the sum of the inputs with associated weighting factors and the products of the inputs with associated weighting factors.

68. An automatic vehicular exterior light control as in claim 65 wherein said classification network analysis further comprises:

at least one hidden layer node, wherein each hidden layer node is associated with at least one weighting factor.

69. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources and a substantially continuous output value indicative of a probability.

70. An automatic vehicular exterior light control as in claim 69 further comprising inputs selected from the group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

71. An automatic vehicular exterior light control, comprising:

a controller configured to generate at least one exterior light control signal as a function of at least one classification network, wherein said at least one classification network comprises at least one variable, at least one weighting factor established by examining statistical data wherein said statistical data is derived from a plurality of images containing known light sources and at least one output.

72. An automatic vehicular exterior light control as in claim 71 wherein said at least one variable is selected from the group of light source characteristics comprising: peak brightness, total brightness, centroid location, gradient, width, height, color, x-direction motion, y-direction motion, brightness change, age, average x-direction motion, average y-direction motion, motion jitter, a change in brightness that correlates to a change in brightness of an exterior light of a controlled vehicle and average brightness change.

73. An automatic vehicular exterior light control as in claim 71 wherein said at least

one variable is selected from the group of controlled vehicle associated operating parameters comprising: vehicle speed, ambient light level, vehicle turn rate, lane tracking, vehicle pitch, vehicle yaw, geographic location and road type.

74. An automatic vehicular exterior light control comprising a method of classifying detected light sources, said method comprising the steps of:

classifying at least one detected light source with a classification network, wherein an output of said classification network is a likelihood that said detected light source is a headlamp of an oncoming vehicle or a tail lamp of a leading vehicle wherein said classification network comprises at least one weighting factor established by examining statistical data, wherein said statistical data is derived from a plurality of images containing known light sources.

IX. Evidence Appendix (35 USC §41.37(c)(1)(ix))

There was no evidence submitted during this application under 37 CFR §§1.130, 1.131 or 1.132 or any evidence entered by the Examiner and replied upon by Appellant in the appeal.

X. Related Proceedings Appendix (35 USC §41.37(c)(1)(x))

There have been no related appeals or interferences pending during prosecution of this application.